



AMENDMENTS TO THE CLAIMS

(Currently Amended) A physiologically active substance-measuring reagent comprising particles of a support polymer obtained by radical emulsion polymerization of:

- (1) 0.1 to 20% by weight of a radically polymerizable vinyl monomer having a carboxylic group,
- (2) 0.05 to 20% by weight of at least one of a radically polymerizable vinyl monomer having a strong acid group and a compound represented by the following formula (I):



wherein R¹ represents a hydrogen atom or a methyl group, R² represents a hydrogen atom, a C₁ to C₆ alkyl group, an alkoxyphenyl group, a phenyl group, an acryloyl group, or a methacryloyl group, and n represents a number of 2 to 22, or combinations thereof and a radically polymerizable vinyl monomer having a strong acid group, and

- (3) 60 to 99.8% by weight of a radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2), and

supported on the particles, a physiologically active substance having an interaction which is capable of interacting with a substance to be measured,

wherein at least one of (1), (2), and (3) is as follows:

(1) said radically polymerizable vinyl monomer is at least one polymerizable unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, propionic acid, itaconic acid, fumaric acid, maleic acid, maleic anhydride, 2-carboxyethyl acrylate, and a 2-carboxyethyl acrylate oligomer;

(2) said radically polymerizable vinyl monomer having a strong acid group is present and is at least one radically polymerizable vinyl monomer having a strong acid group selected from the group consisting of styrenesulfonic acid, 2-sulfoethyl methacrylate, 2-acrylamido-2-

methylpropanesulfonic acid, and 1-allyoxy-2-hydroxypropanesulfonate, or sodium salt thereof, a potassium salt thereof, or an ammonium salt thereof;

(3) said radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) is at least one radically polymerizable vinyl monomer selected from the group consisting of an aromatic vinyl compound, an acrylate, a methacrylate, a vinyl ester compound, a polymerizable double bond-containing cyan compound, and a polymerizable double bond-containing compound.

2. (Original) The physiologically active substance-measuring reagent as claimed in claim 1, wherein the radically polymerizable vinyl monomer having a strong acid group is styrenesulfonic acid or a styrenesulfonic acid salt.

3. (Withdrawn) A method for measuring a physiologically active substance which comprises measuring a substance to be measured by an interaction between the physiologically active substance supported on the physiologically active substance-measuring reagent as claimed in claim 1 and the substance to be measured in a sample.

4. (Withdrawn) The method for measuring a physiologically active substance as claimed in claim 3, wherein the interaction between the substance to be measured and the physiologically active substance supported on the physiologically active substance-measuring reagent is aggregation of the physiologically active substance-measuring agent.

5. (Withdrawn) The method for measuring a physiologically active substance as claimed in claim 3, wherein the interaction between the substance to be measured and the physiologically active substance supported on the physiologically active substance-measuring

reagent is adsorption of the substance to be measured, with the physiologically active substance.

6. (New) The physiologically active substance-measuring reagent according to claim 1, wherein (1) said radically polymerizable vinyl monomer is at least one polymerizable unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, propionic acid, itaconic acid, fumaric acid, maleic acid, maleic anhydride, 2-carboxyethyl acrylate, and a 2-carboxyethyl acrylate oligomer.

7. (New) The physiologically active substance-measuring reagent according to claim 6, wherein in (2) said radically polymerizable vinyl monomer having a strong acid group and said compound represented by the following formula (I) are both present.

8. (New) The physiologically active substance-measuring reagent according to claim 6, wherein (2) said radically polymerizable vinyl monomer having a strong acid group is present and is at least one radically polymerizable vinyl monomer having a strong acid group selected from the group consisting of styrenesulfonic acid, 2-sulfoethyl methacrylate, 2-acrylamido-2-methylpropanesulfonic acid, and 1-allyoxy-2-hydroxypropanesulfonate, or sodium salt thereof, a potassium salt thereof, or an ammonium salt thereof.

9. (New) The physiologically active substance-measuring reagent according to claim 6, wherein (3) said radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) is at least one radically polymerizable vinyl monomer selected from the group consisting of an aromatic vinyl compound, an acrylate, a methacrylate, a vinyl ester

compound, a polymerizable double bond-containing cyan compound, and a polymerizable double bond-containing compound.

10. (New) The physiologically active substance-measuring reagent according to claim 6, wherein (3) is a radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) selected from the group consisting of styrene, vinyltoluene, α -methylstyrene, divinylbenzene, vinylnaphthalene, methyl acrylate, methyl methacrylate, butyl methacrylate, 2-ethylhexyl acrylate, t-butyl methacrylate, cyclohexyl methacrylate, vinyl acetate, vinyl formate, allyl acetate, acrylonitrile, methacrylonitrile, vinylidene cyanide, vinyl chloride, vinylidene chloride, vinyl methyl ketone, vinyl methyl ether, and vinyl ethyl ether.

11. (New) The physiologically active substance-measuring reagent according to claim 1, wherein in (2) said radically polymerizable vinyl monomer having a strong acid group and said compound represented by the following formula (I) are both present.

12. (New) The physiologically active substance-measuring reagent according to claim 11, wherein (2) said radically polymerizable vinyl monomer having a strong acid group is present and is at least one radically polymerizable vinyl monomer having a strong acid group selected from the group consisting of styrenesulfonic acid, 2-sulfoethyl methacrylate, 2-acrylamido-2-methylpropanesulfonic acid, and 1-allyoxy-2-hydroxypropanesulfonate, or sodium salt thereof, a potassium salt thereof, or an ammonium salt thereof.

13. (New) The physiologically active substance-measuring reagent according to claim 11, wherein (3) said radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) is at least one radically polymerizable vinyl monomer selected from

the group consisting of an aromatic vinyl compound, an acrylate, a methacrylate, a vinyl ester compound, a polymerizable double bond-containing cyan compound, and a polymerizable double bond-containing compound.

14. (New) The physiologically active substance-measuring reagent according to claim 11, wherein (3) is a radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) selected from the group consisting of styrene, vinyltoluene, α -methylstyrene, divinylbenzene, vinylnaphthalene, methyl acrylate, methyl methacrylate, butyl methacrylate, 2-ethylhexyl acrylate, t-butyl methacrylate, cyclohexyl methacrylate, vinyl acetate, vinyl formate, allyl acetate, acrylonitrile, methacrylonitrile, vinylidene cyanide, vinyl chloride, vinylidene chloride, vinyl methyl ketone, vinyl methyl ether, and vinyl ethyl ether .

15. (New) The physiologically active substance-measuring reagent according to claim 1, wherein (3) said radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) is at least one radically polymerizable vinyl monomer selected from the group consisting of an aromatic vinyl compound, an acrylate, a methacrylate, a vinyl ester compound, a polymerizable double bond-containing cyan compound, and a polymerizable double bond-containing compound.

16. (New) The physiologically active substance-measuring reagent according to claim 1, wherein (3) is a radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) selected from the group consisting of styrene, vinyltoluene, α -methylstyrene, divinylbenzene, vinylnaphthalene, methyl acrylate, methyl methacrylate, butyl methacrylate, 2-ethylhexyl acrylate, t-butyl methacrylate, cyclohexyl methacrylate, vinyl

acetate, vinyl formate, allyl acetate, acrylonitrile, methacrylonitrile, vinylidene cyanide, vinyl chloride, vinylidene chloride, vinyl methyl ketone, vinyl methyl ether, and vinyl ethyl ether.

17. (New) The physiologically active substance-measuring reagent according to claim 1, wherein

(1) said radically polymerizable vinyl monomer is at least one polymerizable unsaturated carboxylic acid selected from the group consisting of acrylic acid, methacrylic acid, propionic acid, itaconic acid, fumaric acid, maleic acid, maleic anhydride, 2-carboxyethyl acrylate, and a 2-carboxyethyl acrylate oligomer;

in (2) said radically polymerizable vinyl monomer having a strong acid group and said compound represented by the following formula (I) are both present; and

(3) said radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) is at least one radically polymerizable vinyl monomer selected from the group consisting of an aromatic vinyl compound, an acrylate, a methacrylate, a vinyl ester compound, a polymerizable double bond-containing cyan compound, and a polymerizable double bond-containing compound.

18. (New) The physiologically active substance-measuring reagent according to claim 17, wherein (2) said radically polymerizable vinyl monomer having a strong acid group is present and is at least one radically polymerizable vinyl monomer having a strong acid group selected from the group consisting of styrenesulfonic acid, 2-sulfoethyl methacrylate, 2-acrylamido-2-methylpropanesulfonic acid, and 1-allyoxy-2-hydroxypropanesulfonate, or sodium salt thereof, a potassium salt thereof, or an ammonium salt thereof.

19. (New) The physiologically active substance-measuring reagent according to claim 17, wherein (3) is a radically polymerizable vinyl monomer copolymerizable with the monomers (1) and (2) selected from the group consisting of styrene, vinyltoluene, α -methylstyrene, divinylbenzene, vinylnaphthalene, methyl acrylate, methyl methacrylate, butyl methacrylate, 2-ethylhexyl acrylate, t-butyl methacrylate, cyclohexyl methacrylate, vinyl acetate, vinyl formate, allyl acetate, acrylonitrile, methacrylonitrile, vinylidene cyanide, vinyl chloride, vinylidene chloride, vinyl methyl ketone, vinyl methyl ether, and vinyl ethyl ether.

20. (New) The physiologically active substance-measuring reagent according to claim 1, further comprising a polymerization initiator or an emulsifier, or combinations thereof.

21. (New) The physiologically active substance-measuring reagent according to claim 1, wherein the particle size of the said particles ranges from 0.03 to 2 μm .

22. (New) The physiologically active substance-measuring reagent according to claim 1, wherein said physiologically active substance is selected from the group consisting of an antigen, an antibody, a protein, streptoavidin, a nucleic acid, and a sugar chain substance.

23. (New) The physiologically active substance-measuring reagent according to claim 1, wherein the amount of the physiologically active substance ranges from 5 to 80 mg per 1 g of the particles.